

**Please delete the present Abstract of the Disclosure.**

**Please add the following new Abstract of the Disclosure:**

A plasma buildup method for building up an optical fiber perform. The method includes the steps of: providing a plasma torch having an outlet nozzle adjacent to a primary perform, wherein an interaction zone is defined between the outlet nozzle and the primary preform; feeding the plasma torch with a plasma-generating gas in the presence of a silica-based material so as to deposit a buildup material on the primary preform; and introducing a reducing element into the interaction zone, the reducing element reacting to induce reduction of the nitrogen oxides produced by interaction between nitrogen and oxygen in the presence of the plasma generated by the torch.